

What is claimed is:

1. A joint construction of cobalt-based alloy in which a cobalt-based alloy material portion is diffusion bonded to a base metal portion by interposing an insert metal between said cobalt-based alloy portion, in which granular or massive eutectic carbide disperses in a matrix of metal microstructure, and said base metal portion, wherein

a layer of said insert metal is formed over said base metal portion, and said cobalt-based alloy portion is located over said insert metal layer.

2. The joint construction of cobalt-based alloy according to claim 1, wherein said base metal portion and said cobalt-based alloy portion contain an element diffused from said insert metal.

3. The joint construction of cobalt-based alloy according to claim 1 or 2, wherein said insert metal layer contains an element diffused from said base metal portion and cobalt diffused from said cobalt-based alloy portion.

4. The joint construction of cobalt-based alloy material according to any one of claims 1 to 3, wherein the grain size of said eutectic carbide is not larger than 30 μm .

5. The joint construction of cobalt-based alloy material according to any one of claims 1 to 4, wherein said base metal portion is formed of any of carbon steel, low alloy steel, and stainless steel.

6. The joint construction of cobalt-based alloy material according to any one of claims 1 to 5, wherein said cobalt-based alloy portion contains 0.6 to 3% C, 2% or less Si, 25 to 32% Cr, 15% or less W, 0 to 3% Fe, 0 to 3% Ni, and 0 to 6% Mo by weight, the balance being Co and unavoidable impurities.

7. A valve comprising a valve casing and a valve element disposed in said valve casing, said valve casing having a valve seat which comes into contact with said valve element, wherein

said valve seat has a cobalt-based alloy portion in which granular or massive eutectic carbide disperses in a matrix of metal microstructure and which is brought into contact with said valve element, and a body portion installed to said valve casing,

said cobalt-based alloy portion is diffusion bonded to said body portion by interposing an insert metal between said cobalt-based alloy portion and said body portion, and

a layer of said insert metal is formed over said body portion, and said cobalt-based alloy portion is located over said insert metal layer.

8. A valve comprising a valve casing and a valve element disposed in said valve casing, said valve casing and said valve element each having a valve seat which comes into contact with each other, wherein

said valve seats each have a cobalt-based alloy portion in which granular or massive eutectic carbide disperses in a matrix of metal microstructure and which is brought into contact with the other valve element, and a body portion installed to said valve casing,

said cobalt-based alloy portion is diffusion bonded to said body portion by interposing an insert metal between said cobalt-based alloy portion and said body portion, and

a layer of said insert metal is formed over said body portion, and said cobalt-based alloy portion is located over said insert metal layer.

9. The valve according to claim 8, wherein said body portion and said cobalt-based alloy portion contain an element diffused from said insert metal.

10. The valve according to claim 8 or 9, wherein said insert metal layer contains an element diffused from said body portion and cobalt diffused from said cobalt-based alloy portion.

11. The valve according to any one of claims 8 to 10, wherein the grain size of said eutectic carbide is not larger than 30 μm .

12. The valve according to any one of claims 8 to 11, wherein said body portion is formed of carbon steel, low alloy steel, or stainless steel.

13. The valve according to any one of claims 8 to 12, wherein said cobalt-based alloy material portion contains 0.6 to 3% C, 2% or less Si, 25 to 32% Cr, 15% or less W, 0 to 3% Fe, 0 to 3% Ni, and 0 to 6% Mo by weight, the balance being Co and unavoidable impurities.

14. A nuclear reactor plant comprising a reactor incorporating a reactor core, a system in which a coolant in said reactor flows, and a valve provided in a pipe of said system, wherein

said valve has a valve casing and a valve element disposed in said valve casing,

said valve casing has a valve seat which comes into contact with said valve element,

said valve seat has a cobalt-based alloy portion in which granular or massive eutectic carbide disperses in a matrix of metal microstructure and which is brought into contact with

said valve element, and a body portion installed to said valve casing,

said cobalt-based alloy portion is diffusion bonded to said body portion by interposing an insert metal between said cobalt-based alloy portion and said body portion, and

a layer of said insert metal is formed over said body portion, and said cobalt-based alloy portion is located over said insert metal layer.

15. A nuclear reactor plant comprising a reactor incorporating a reactor core, a system in which a coolant in said reactor flows, and a valve provided in a pipe of said system, wherein

said valve has a valve casing and a valve element disposed in said valve casing,

said valve casing and said valve element each have a valve seat which comes into contact with each other,

said valve seats each have a cobalt-based alloy portion in which granular or massive eutectic carbide disperses in a matrix of metal microstructure and which is brought into contact with the other valve element, and a body portion installed to said valve casing,

said cobalt-based alloy portion is diffusion bonded to said body portion by interposing an insert metal between said cobalt-based alloy portion and said body portion, and

a layer of said insert metal is formed over said body portion, and said cobalt-based alloy portion is located over said insert metal layer.

10083355.022706